Results of the 2000 Survey of the Reintroduced Sea Otter Population in Washington State

Prepared by

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The survey was conducted from 11-14 July. The entire inshore area from Pt. Grenville (including Destruction Island) to Pillar Point was surveyed. Counting conditions this year ranged from fair to excellent. The survey was conducted cooperatively by biologists of the Biological Resources Division of the United States Geological Survey, the Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service, Olympic National Park, and the Olympic Coast National Marine Sanctuary. We wish to thank the U. S. Fish and Wildlife Service and the Olympic National Park whose funding support made the survey possible this year.

Methods

Most of the range was surveyed from a fixed-winged aircraft, but several ground stations were occupied as well (Sand Pt., and Cape Alava on all days, and Cape Johnson and Duk Point on some). Two surveys are conducted each day over a period of three days. Thus, when conditions are favorable, six surveys of the entire range are completed. Inclement weather on 13 July precluded aerial surveys, but we continued the survey through 14 July to make up for the lost day. In 1999 we added an offshore leg to the aerial protocol, it was included again this year, and will be a part of all future surveys.

The survey total is calculated by summing the highest daily total for the south (Destruction Island to La Push) and north (La Push to Sekiu River) segments of the sea otter range. This assumes that there is little or no movement between the two segments during the survey period. Examination of survey data from years past and this year and documented movements of instrumented sea otters by USGS researchers in Washington support this assumption. Large groups (>20) observed from the air were counted and photographed. The developed slides were recounted and these counts were used when image quality was good and ground counts were not available or were less than the slide count.

Results

The highest count for the survey was 504 sea otters, a decrease of 17% from 1999 (*Table* 1). The average finite rate of increase for this population since 1989 is 9.4% (*Figure* 1.). There is no obvious explanation for the lower count this year. However, the results are reason for concern, but it will take several more surveys to determine if this population is actually declining. No pups were observed on the legs when the highest counts were made this year. It's not unusual for few pups to be detected from the aircraft because they are difficult to distinguish from adults, but this year in the Cape Alava-Sand Point segment, which is mostly counted from the ground, no pups were seen during the high count legs, and few pups were seen at all throughout the survey. For comparison, in 1999 the overall pups to independents ratios were 9:100 independents, and 17:100 in ground count segments. In 2000, no pups were seen from the air, and the best ground count ratio for the same area (Cape Alava-Sand Point) was 4:100.

Most of the decrease this year was south of La Push, which was down 22% from 1999. However, the area north of La Push was also down by 12%. No one location in the southern portion of the range stood out in terms of the decline. The Destruction Island and Hoh River to Perkins Reef areas declined 25 and 28 percent, respectively.

The distribution of sea otters in Washington remained relatively unchanged in 2000, with one notable exception (*Figure* 2.). The area from Sand Point to Cape Alava was down by 56%. This probably reflects a shift in distribution southward because the area from Cape Johnson to Yellow Banks increased by 74%. The Sand Point to Cape Alava area has long been a high-density area and was one of the earliest known areas occupied after the 1969/70 reintroductions. It will be interesting to see if the decrease is permanent or just an artifact of a short-term distributional shift. The distribution of sea otters between the north and south segments has remained unchanged. In 1999, the southern segment (La Push south) comprised 43% of the total, in 2000 about 40%. In the northern section (La Push north) 57% and 60% of the total occurred in 1999 and 2000, respectively.

Discussion

Survey results this year are perplexing. The expected count, based on the regression model through 1999, would have been about 620. The actual observed number (504) is 116 animals less than the projected total. We believe that it's unlikely that we missed such a large number of animals within the survey area.

Three changes in distribution are worth discussing this year. The first and numerically most significant, already noted above, was north of La Push, suggesting a shift in concentration from the Cape Alava to Sand Point area to the Cape Johnson to Yellow Banks segment. Second, a single sea otter was recorded well east, Pillar Point, of where we have observed sea otters in past annual surveys. Although only one otter was observed, winter surveys indicate that larger numbers are using the area at other times of the year. The large male group that has entered the Strait of Juan De Fuca each winter since 1995 was noted during winter 2000 just a few kilometers west of Pillar Point, although counts of this group have not been as high as in prior years. During the previous winter, the group was most frequently noted about 20 kilometers

further west near the mouth of the Sekiu River. Third, the observation of a single animal near Willoughby Rock (30 kilometers south of Destruction Island) represents the most southern record yet obtained during annual surveys. However, in February 2000 over 40 sea otters were counted from Ruby Beach to Kalaloch Rocks, 8-10 kilometers south of Destruction Island. These shifts in distribution suggest a possible range expansion at each end of the population range, especially the southern end. Further support for the latter was added, beginning in June and lasting to mid August, when a number of sea otter carcasses and moribund individuals began being recovered well south of the usual range, an event unprecedented since we began the surveys in 1977.

Beginning in June and continuing well into August, 14 sea otters are know to have died along beaches extending from South Beach Campground (5 kilometers south of Kalaloch) to Sand Lake, Oregon (270 kilometers south of Destruction Island). The Oregon animal was badly decomposed, which suggests the carcass may have drifted a significant distance before becoming beach cast. However, most of the carcasses recovered were in relatively good shape and in some cases were known to have been alive within hours of being recovered. Three carcasses were recovered on the Long Beach Peninsula.

Because the southern segment declined overall by 22% and the Destruction Island and Perkins Reef/Hoh River areas specifically were down by 25 and 28%, respectively, we could speculate that there may have been a shift in distribution to the south of Destruction Island. Only one sea otter was observed in this area during the survey, but the distribution of carcass recoveries, starting in June, may indicate a seasonal shift southward, perhaps beyond our survey area. We plan to include more of the area south of our usual survey area in 2001. Offshore areas with open water are difficult to survey, but a protocol has been developed in California for similar habitat, which we will consider incorporating into our 2001 survey.

Table 1. **Comparison of the 2000 and 1999 sea otter surveys in Washington State.**

	JULY 2000 RESULTS			JULY 1999 RESULTS			
LOCATION	**INDEPENDENT**	**PUPS**	**TOTAL**	**INDEPENDENT**	**PUPS**	**TOTAL**	**% Change**
WILLOUGHBY ROCK	1	0	1	0	0	0	
DESTRUCTION I.	129	0	129	169	2	171	-25%
HOH RIVER/PERKINS REEF	61	0	61	73	12	85	-28%
TOLEAK/STRAWBERRY PT.	1	0	1	0	0	0	
GIANTS GRAVEYARD/TEAHWHIT HEAD	8	0	8	2	0	2	300%
JAMES I./HOLE-IN -THE-WALL	1	0	1	0	0	0	
S. CAPE JOHNSON/CHILEAN MEMORIAL	0	0	0	11	2	13	-100%
CAPE JOHNSON/BLUFF PT.	95	0	95	13	2	15	533%
OFFSHORE 0.5 MILES BLUFF PT.	0	0	0	56	0	56	-100%
CARROL ISLAND/ SEA LION ROCK	1	0	1	0	0	0	
SANDY I.	0	0	0	3	1	4	-100%
JAGGED I.	16	0	16	1	0	1	1500%
CEDAR CREEK TO NORWEGION MEM.	42	0	42	9	2	11	282%
KAYOSTLA BEACH	0	0	0	3	0	3	-100%
YELLOW BANKS AREA	34	0	34	17	1	18	89%
SAND PT.	15	0	15	33	3	36	-58%
INSHORE WHITE ROCK /WEDDING ROCKS	0	0	0	1	0	1	-100%
S. OZETTE I.	2	0	2	0	0	0	
OZETTE/CAPE ALAVA/BODELTEH	48	0	48	97	19	116	-59%
WEST END OF BODELTEH	2	0	2	1	0	1	100%
OZETTE RIVER	0	0	0	1	0	1	-100%
DUK PT.	35	0	35	38	5	43	-19%
FATHER AND SON	1	0	1	13	1	14	-93%
PT. OF ARCHES	4	0	4	2	0	2	100%
ANDERSON PT.	5	0	5	0	0	0	
MAKAH BAY	0	0	0	5	0	5	-100%
FUCA PILLAR	0	0	0	1	0	1	-100%
TATOOSH I.	2	0	2	5	0	5	-60%
PILLAR POINT	1	0	1	0	0	0	
TOTAL	504	0	504	554	50	604	-17%

Figure 1 . Growth of the Washinton population based on annual surveys, 1989-2000.

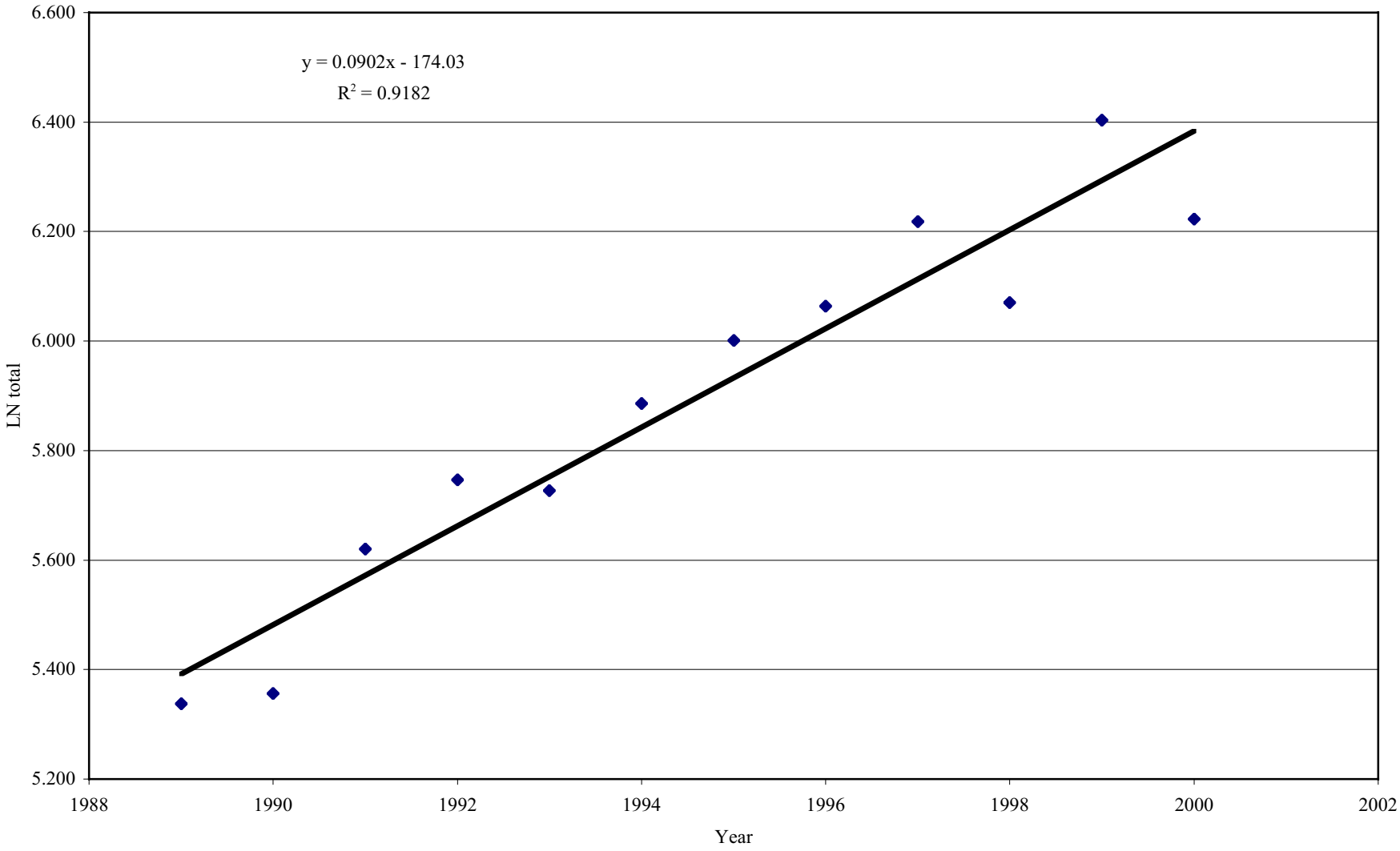

Figure 2. Distribution of sea otters in Washington State, 1999 and 2000. Segments do not represent actual coastal distance.